

GEORGE ENGELMANN
BOTANICAL NOTEBOOKS

Pagination Note:
Since many of the items lack a specific page number, the page number displayed online refers to the sequentially created number each item was given upon cataloging the materials.

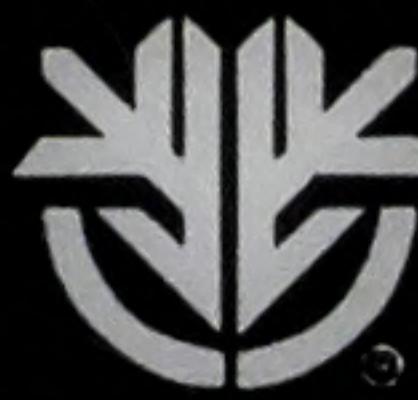
Cochlear
See Gard Chron. Feb 23 1878
in *Aroid* with 2 spathes
in *Zeratologia*



0 1 2 3 4 5 6 7 8 9 10

cm

copyright reserved



MISSOURI
BOTANICAL
GARDEN

3710



0 1 2 3 4 5 6 7 8 9 10

cm

copyright reserved



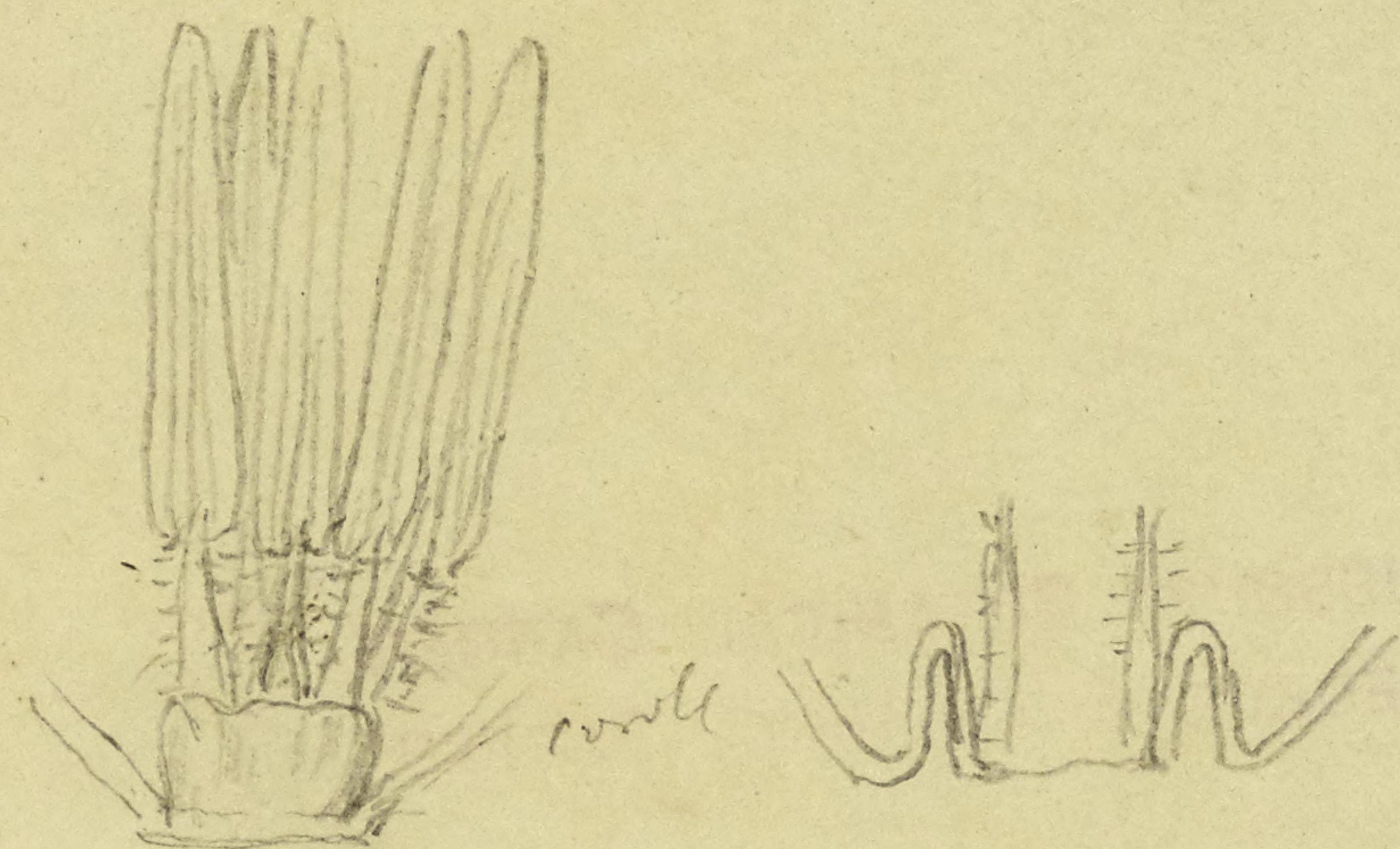
MISSOURI
BOTANICAL
GARDEN

84 Amb

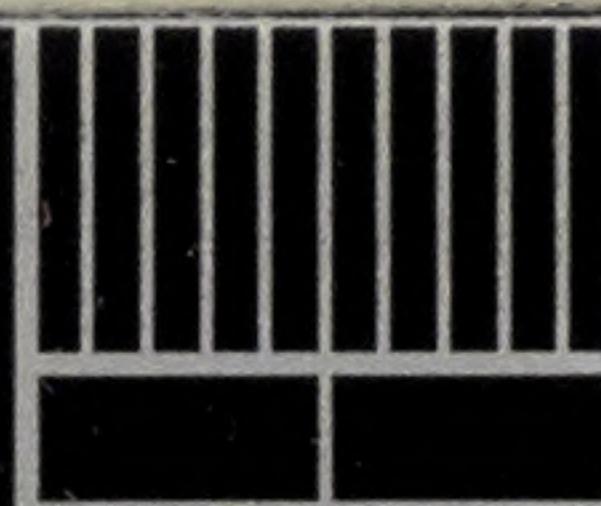
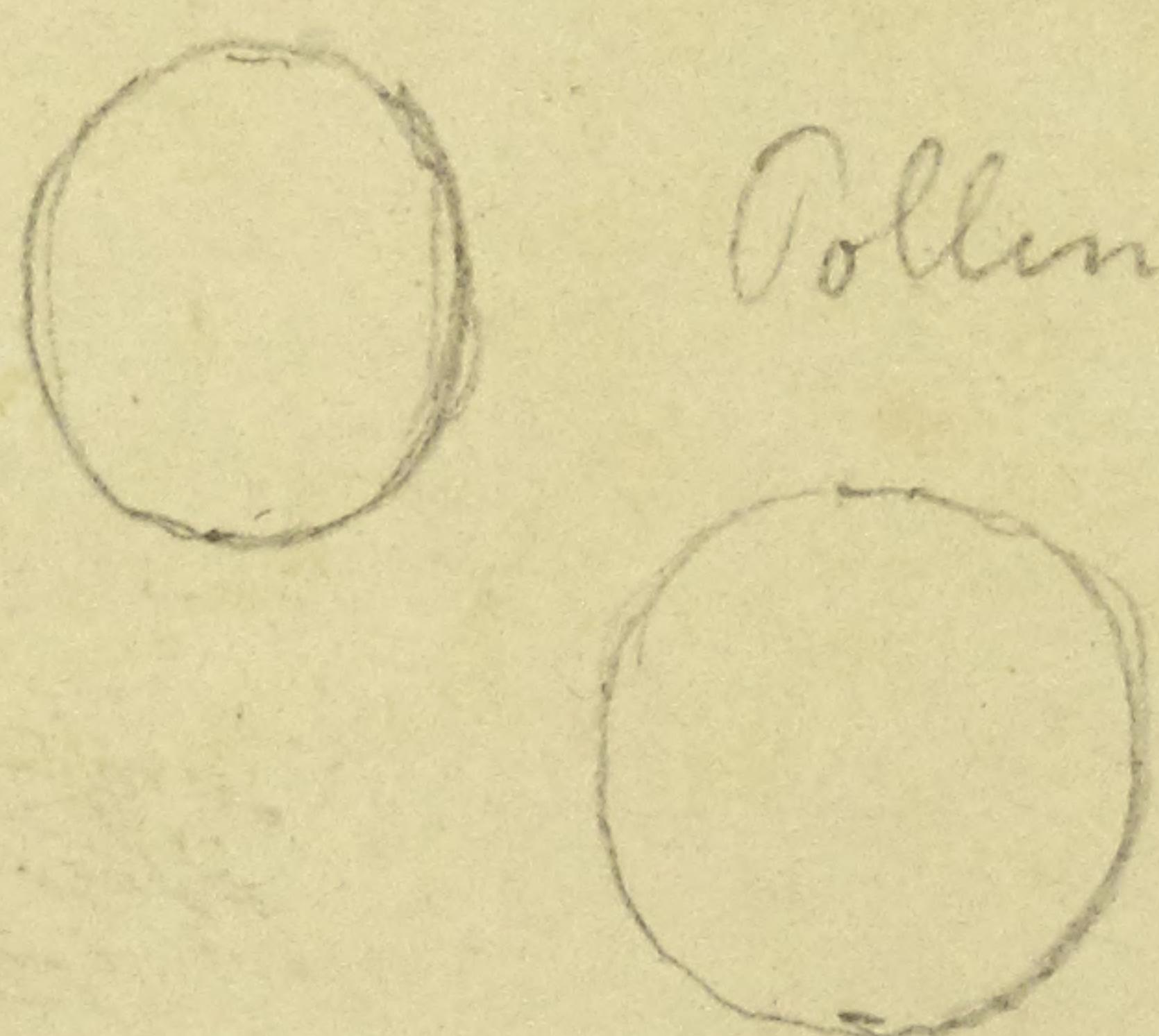
Cinchona alba

Aug 30 '63

HB B. Missouri



x415



0 1 2 3 4 5 6 7 8 9 10

cm

copyright reserved



MISSOURI
BOTANICAL
GARDEN

3711

ALEX. LEITCH,
APOTHECARY & PHARMACEUTIST.

Marble Building Cor. Fourth & Olive Sts. St. Louis, Mo.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS



0 1 2 3 4 5 6 7 8 9 10

cm

copyright reserved

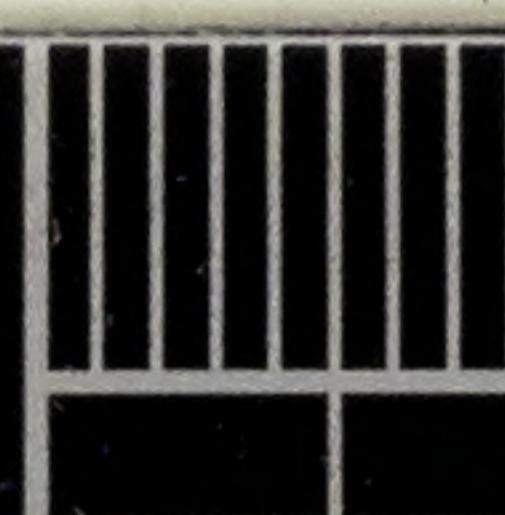
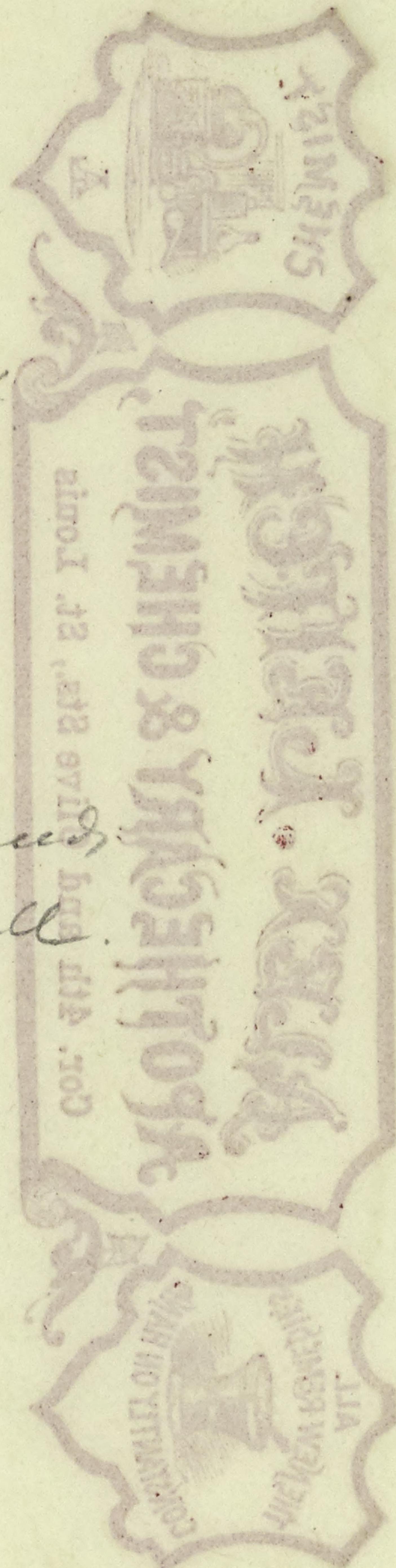
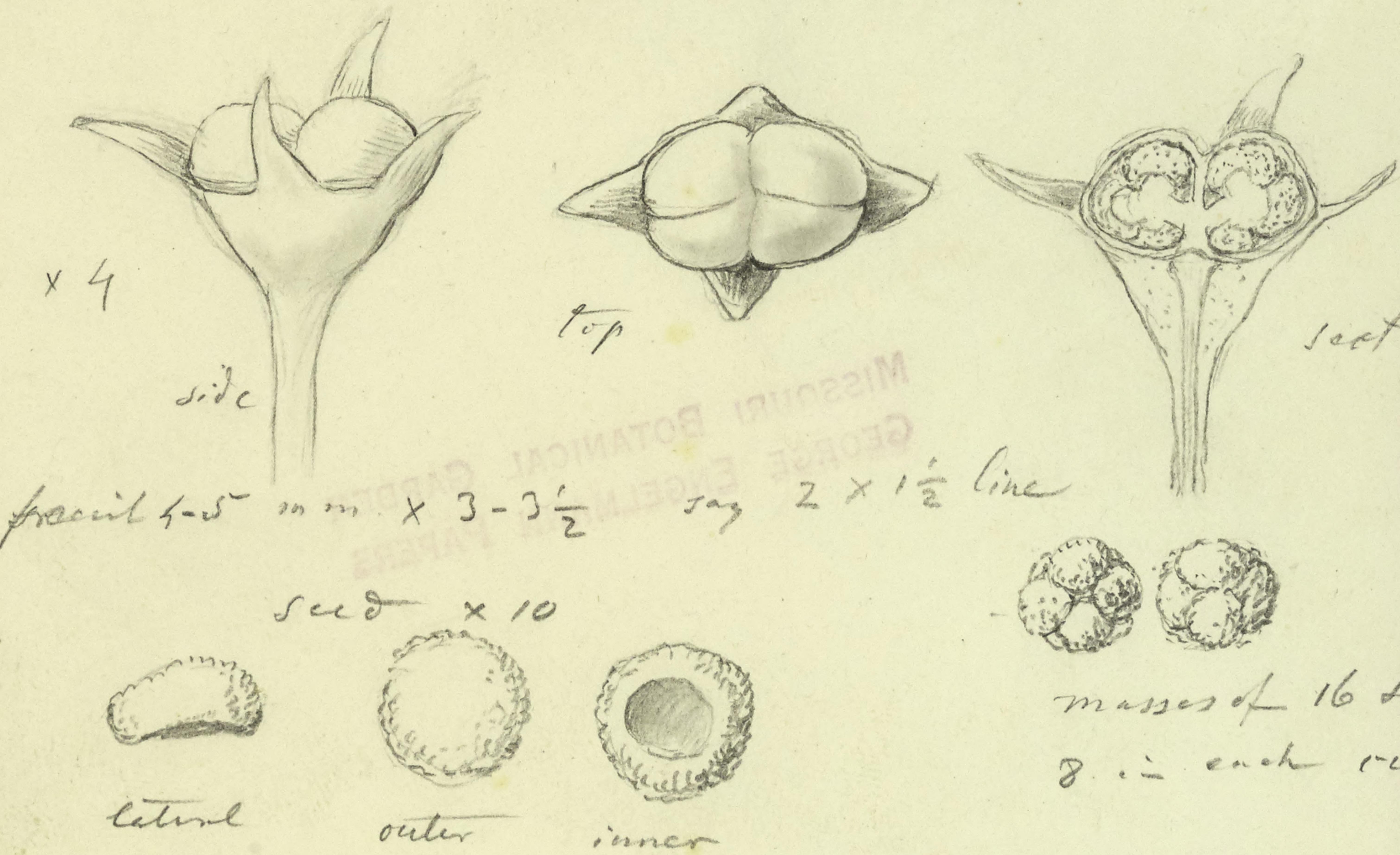


MISSOURI
BOTANICAL
GARDEN

5158

Houstonia canadensis

May 3 1863



0 1 2 3 4 5 6 7 8 9 10
cm

copyright reserved

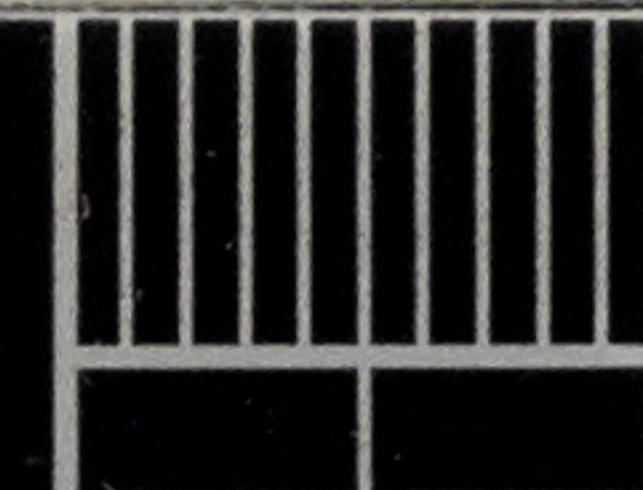


MISSOURI
BOTANICAL
GARDEN

3712



MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS



0 1 2 3 4 5 6 7 8 9 10

cm

copyright reserved



MISSOURI
BOTANICAL
GARDEN

84 *Rubiace*
85 *Valerianaceae*
~~*Rosaceae*~~ — ~~*Valerianaceae*~~

0
cm

1

2

3

4

5

6

7

8

9

10

copyright reserved

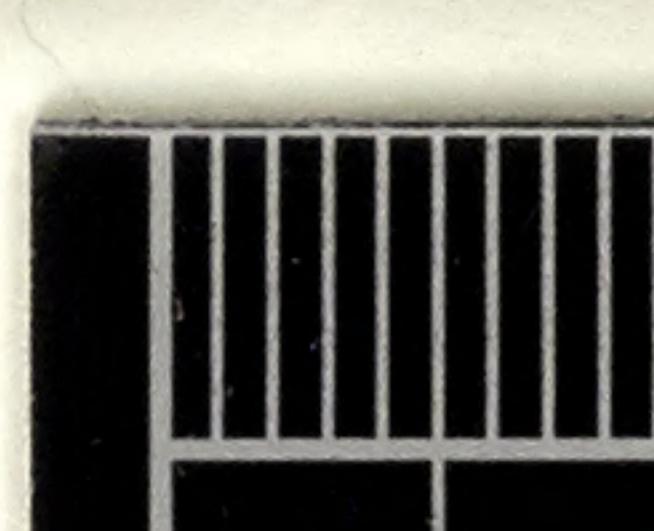
MISSOURI
BOTANICAL
GARDEN

4001. *Scrophularia*

Scrophularia

66.5 fm

Scrophularia
Scrophularia
Scrophularia



0

1

2

3

4

5

6

7

8

9

10

cm

copyright reserved

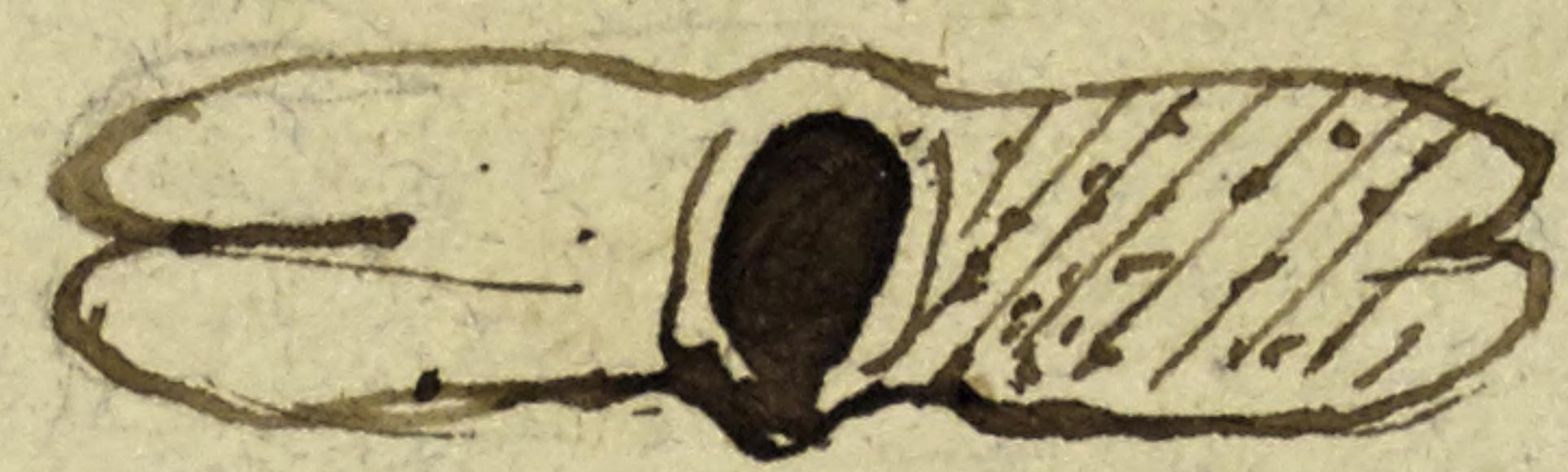


MISSOURI
BOTANICAL
GARDEN

Fedia

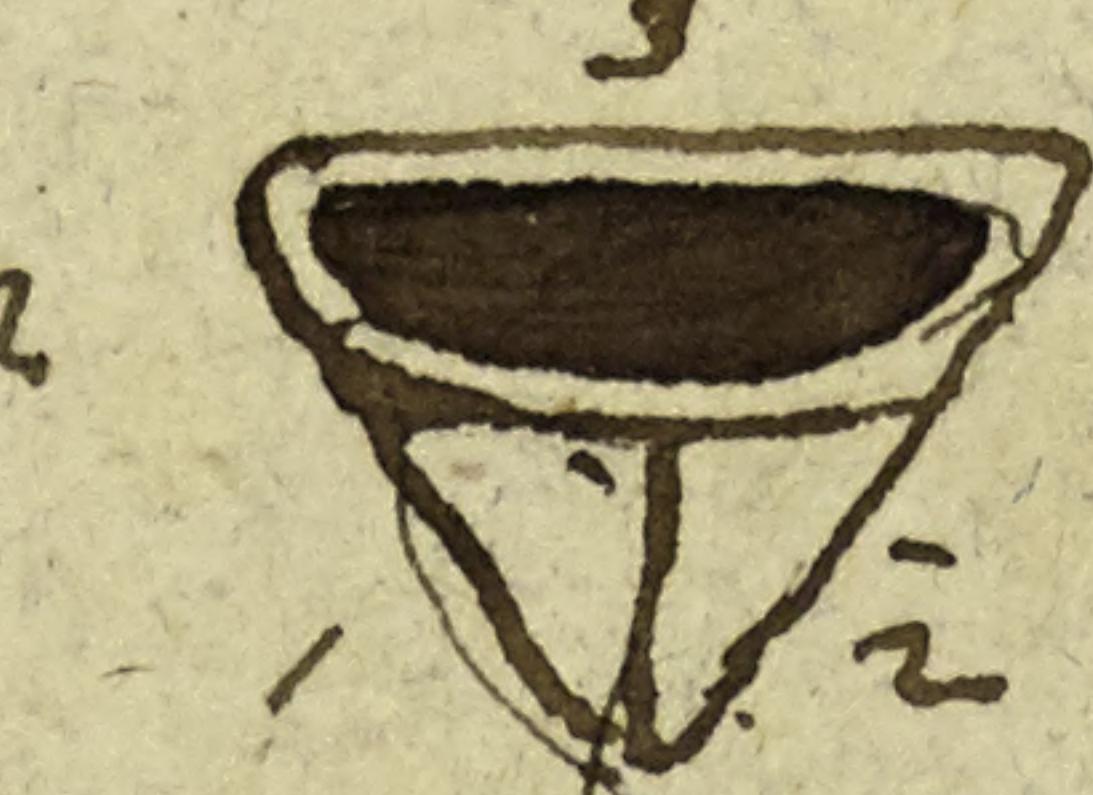
1 2 3

olitoria



Section of Seed
1. hollow 2. seed. 3. corky

Fagopyrum T. A. Gr.



1 & 2. hollow, 3. seed

Ohio

longistylis



Arkansas

1 & 2. hollow, 3. seed

carinata



1 & 2. hollow, 3. seed

divaricata



Morrisonii
- dentata and.



1, 2. small cavities, 3. seed

coronata



eriocarpa



dentata



St Louis Aug 27. 1841

cormo copiae

vesicaria

echinata



radiata Mx



St Louis Mar 1841



stenocarpa Engelm



100 mg. Texas April 48.



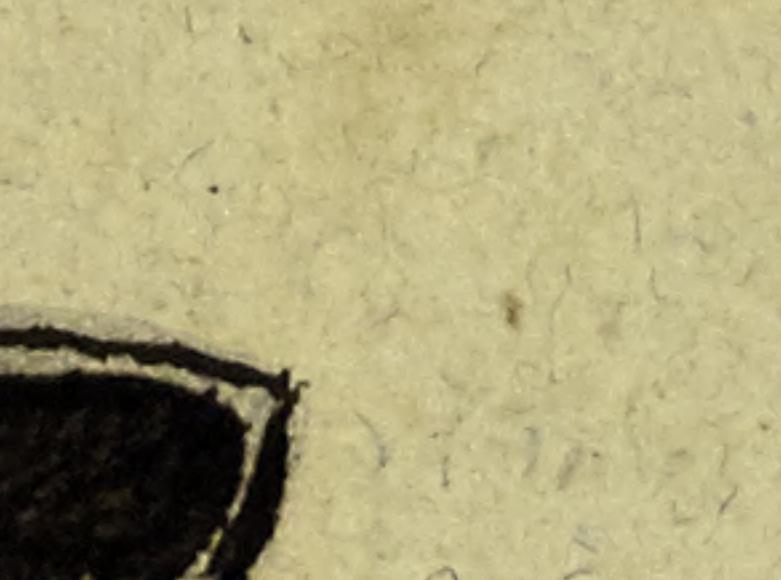
umbilicata Salisb



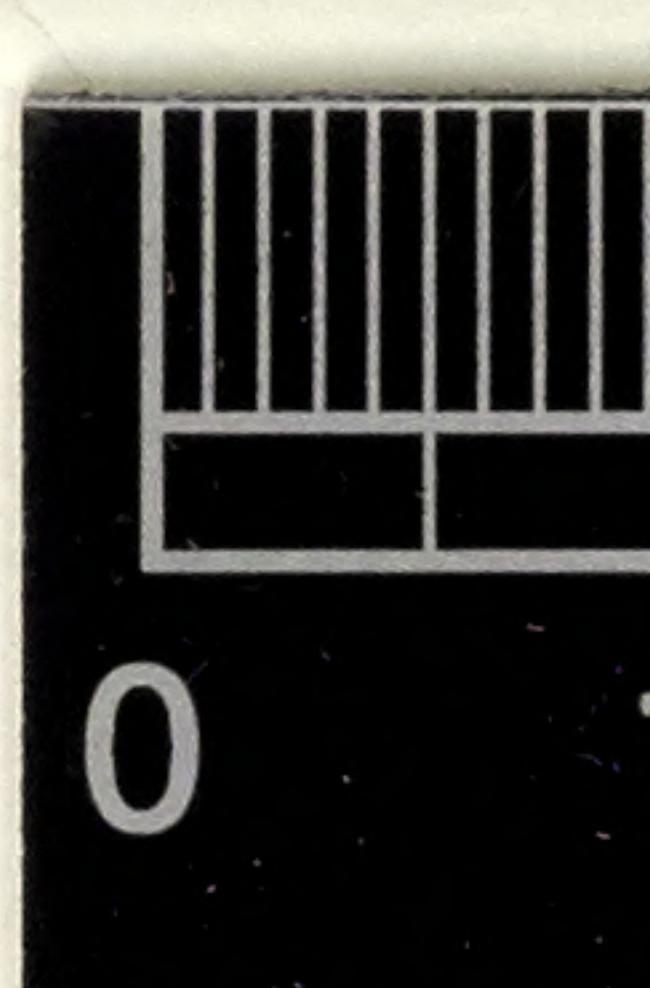
Cincinnati



amarella Benth



Concordia Tex 1849



0
cm

1

2

3

4

5

6

7

8

9

10

copyright reserved



MISSOURI
BOTANICAL
GARDEN

3713

No illustrations!

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS



0
cm

1

2

3

4

5

6

7

8

9

10

copyright reserved

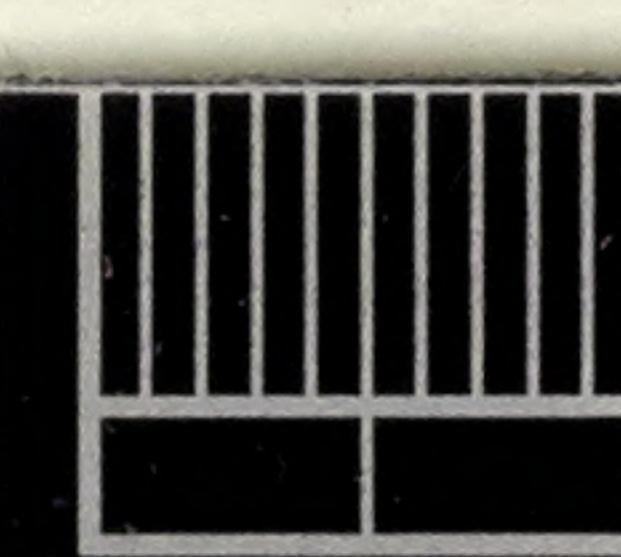


MISSOURI
BOTANICAL
GARDEN

1-35

88

Compositae



0 1 2 3 4 5 6 7 8 9 10

cm

copyright reserved

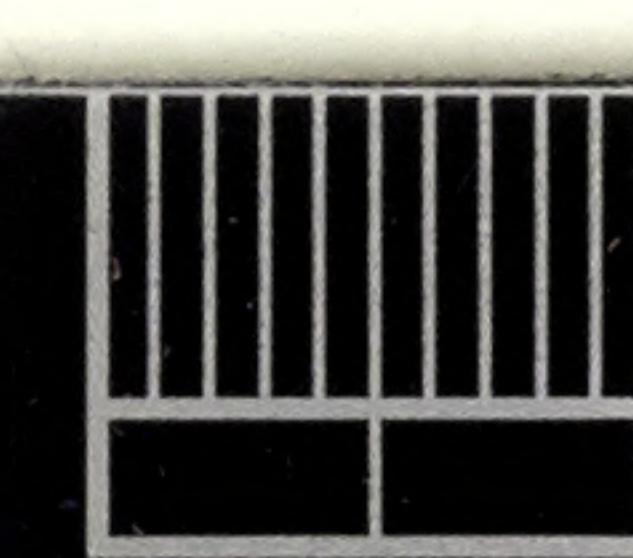


MISSOURI
BOTANICAL
GARDEN

3714

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

88



0 1 2 3 4 5 6 7 8 9 10
cm

copyright reserved



MISSOURI
BOTANICAL
GARDEN

Order of flowering of
Solidago

- *Aster*

August. *S. missouriensis*

A. patens

S. nemoralis p.

A. rigidus

A. ageratum

S. radula

A. patens

S. uliginosa

A. rigidus

September *S. Tigrina*

A. ageratum

S. canadensis

A. erioides

S. gigantea

A. laevis

S. nemoralis

A. tuberosus

S. latifolia

A. multiflorum

S. squarrosa

A. undulatum ?

S. drummondii

A. sericeus

S. speciosa

A. canescens

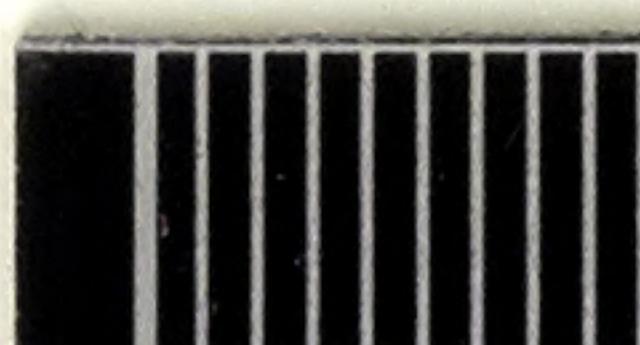
A. novae Angl.

A. frigidus

A. friderici

A. tenuifolius

A. oblongifolius



0
cm

1

2

3

4

5

6

7

8

9

10

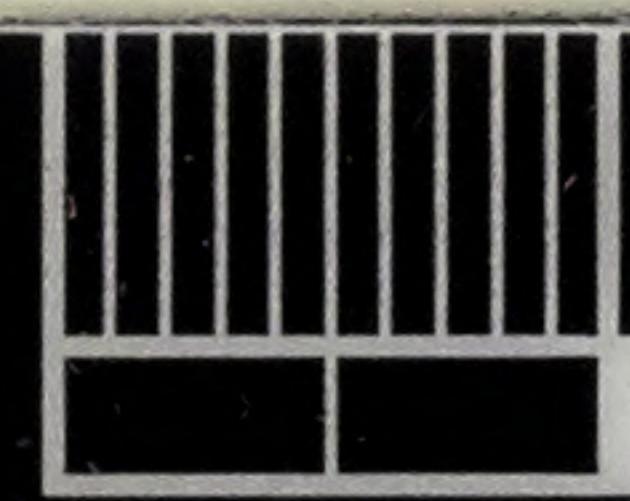
copyright reserved



MISSOURI
BOTANICAL
GARDEN

3715

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS



0 1 2 3 4 5 6 7 8 9 10

cm

copyright reserved



MISSOURI
BOTANICAL
GARDEN

Baccharis pilularis ♀
in Berkeley Canyon
12 feet high, circumference
of stem 8 inches



0 1 2 3 4 5 6 7 8 9 10

cm

copyright reserved



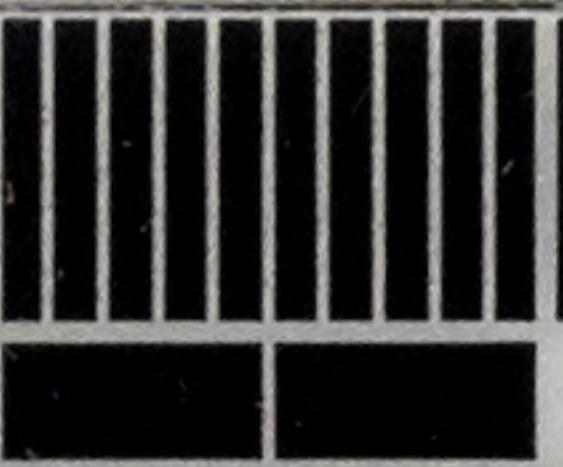
MISSOURI
BOTANICAL
GARDEN

CO

3716

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

Engelm



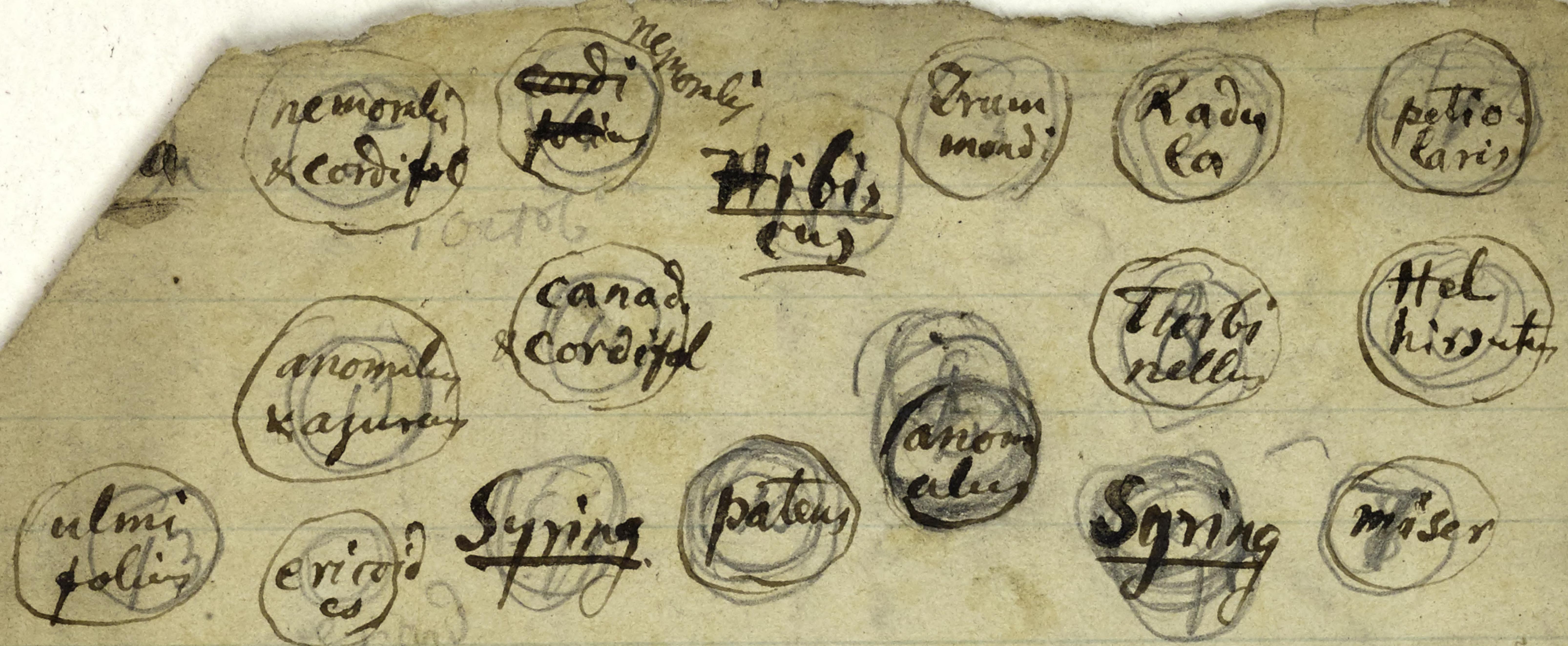
0 1 2 3 4 5 6 7 8 9 10

cm

copyright reserved



MISSOURI
BOTANICAL
GARDEN



flowering. Middle of Sept. *Abelidago radula*

1871 Last week of Sept. Sol. ulmifol. canad. petiolata
Ass anomala pateus

9 am first week in Oct. Sol. Drummondii

St. Turbinella cordifolia

miser

• vegetal in

1871 36 vegetal species 'more esp'

• esp. in sp. of ~~gorgonias~~ by many

more esp. of ~~gorgonias~~ as. esp. in

77 esp. 'gorgonias' in ~~gorgonias~~ of esp. 'one.



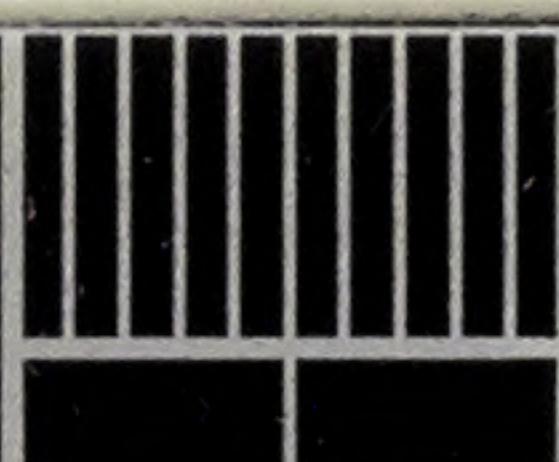
0 1 2 3 4 5 6 7 8 9 10
cm

copyright reserved



MISSOURI
BOTANICAL
GARDEN

John
H. C. Gossamer



0 1 2 3 4 5 6 7 8 9 10
cm copyright reserved

copyright reserved



MISSOURI BOTANICAL GARDEN

July 12 1878

Stomata of *S. Ghium*
S. Ghium Composite, N. C. Curtis
upper side magn. 150 - field 18-20 sta. = 11 in. 23-26,000 }
upper side magn. 280 6-10-11 in. 27-40,000 }
under side 150 37-38-39 - 47-50,000 }
under side 280 12-14-14 54-63,000 }

S. latifolium

opposite	150	48-50	62-65,000 }
under side	280	17-20	75-90,000 }
opposite	150	54-58	69-75,000 }
under side	280	14-17	63-71,000 }

S. latifolium

upper side	150	38-40	48-50,000 }
under side	280	9-10	40-50,000 }
upper side	150	same as opp	48-57,000 }
upper side	150	26-30	40-50,000 }

upper side	150	26-30	33-39,000 }
upper side	280	9-10	40-45,000 }
upper side	150	30-36	39-46,000 }
upper side	280	10-16	45-50,000 }

S. Strobilifera

opposite	150	36-38	46-49,000 }
opposite	280	10-13	45-58,000 }
upper side	150	52-55	67-71,000 }
upper side	280	15-19	67-85,000 }

S. dentata opposite none

lower	280	none	none
lower	150	30-35	67-71,000 }
lower	280	15-16	67-76,000 }

C. virginiana upper 150 13-20
leaves rough 280 2-6

16,000-26,000 }
9,000-23,000 }

lower	150	45-55	58-71,000 }
lower	280	12-18	53-81,000 }

A. M. Hartman
upper smooth 150 24-37
upper smooth 280 10-14-13
lower smooth 150 26-30
lower smooth 280 32-38

upper	150	24-37	31-48,000 }
upper	280	10-14-13	45-54,000 }
lower	150	26-30	87-90,000 }
lower	280	32-38	134-170,000 }




0 1 2 3 4 5 6 7 8 9 10
cm

copyright reserved



MISSOURI
BOTANICAL
GARDEN

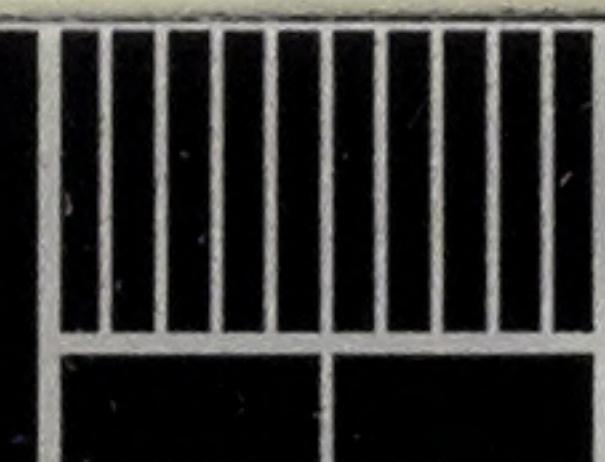


301 South Fifth St. W. Court. St. Louis, Mo.

MISSOURI BOTANICAL GARDEN
"SIBONI" ENGLISH PAPERS

ARTHUR, T. H. HOLLISSER,

3718



0
cm

copyright reserved



MISSOURI BOTANICAL GARDEN

St Louis S. carolinata

13-14 stone-field x 280

10-12 - - -

Solphiella

on one side

on the other side

R

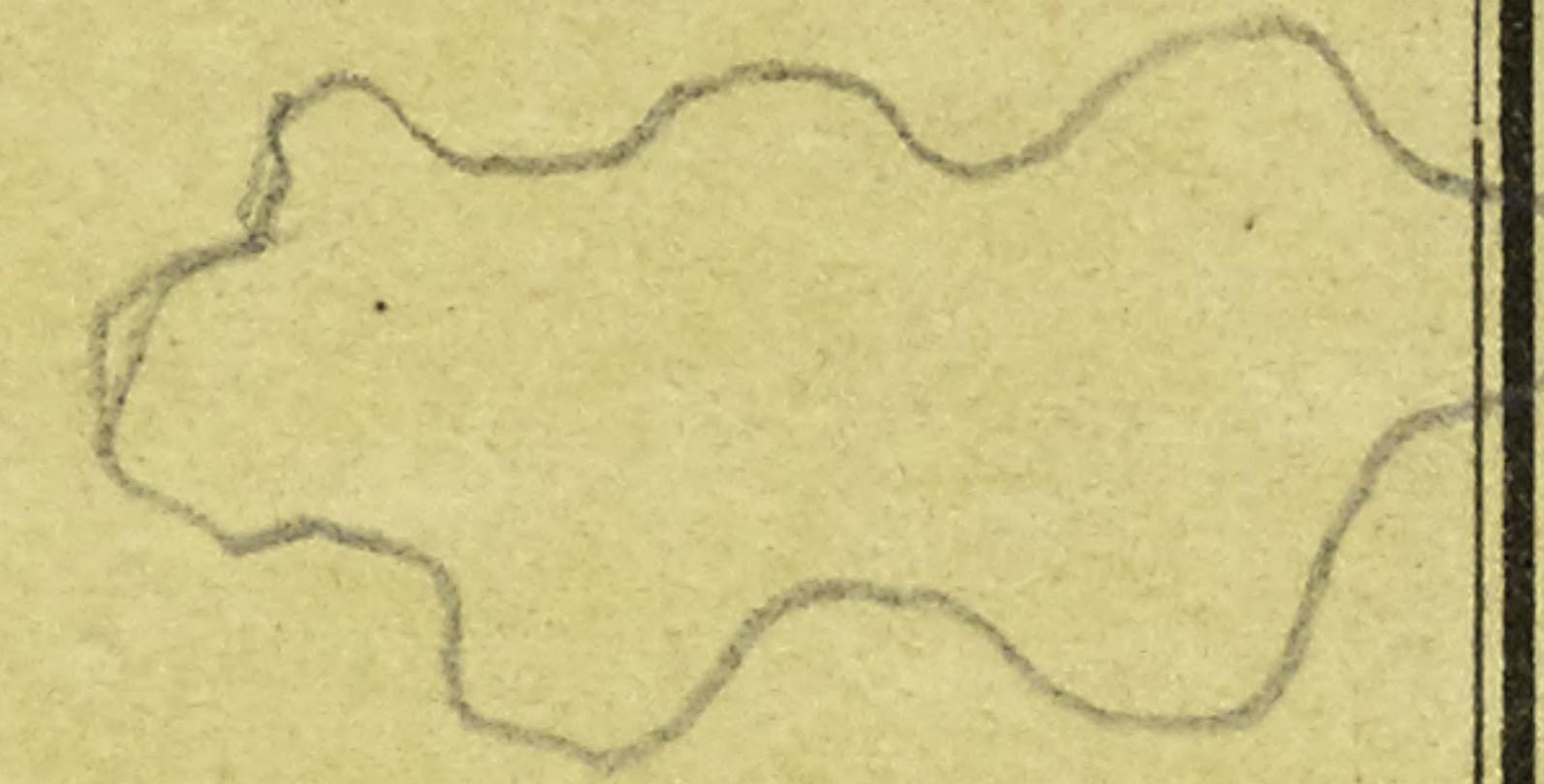
Texas

12-14

12

one side

the other side



S. glabra, prepared in Texas

left specimen

1. spec.

7 specimen

6

right specimen

6

7

upper side

11-14

9-10

10-12

0

5-9

10-12

lower side no spec.

16-19

10-12

12-14

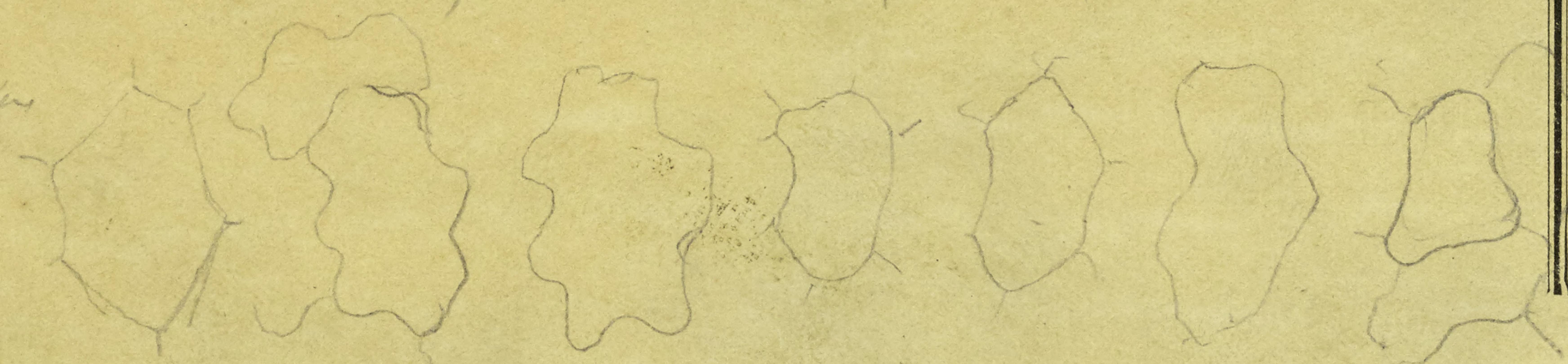
13-14

11-14

23-25

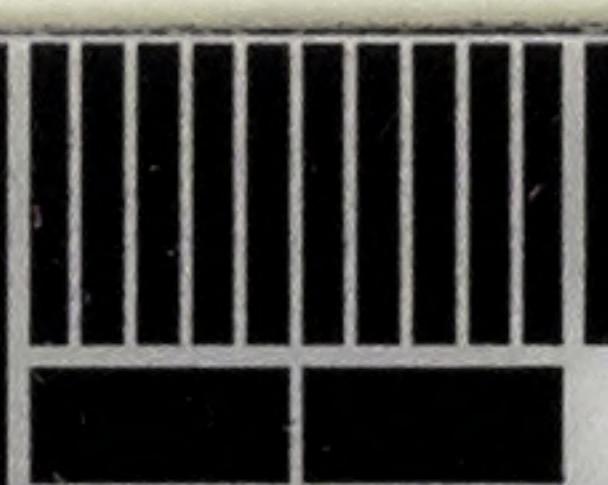
cells of upper

side



ARTHUR T. DRUGGISTER,
HOLLISTER,
S. carolinata

Aug 25 '18
Aug 280
301 South Fifth, S. W. Cor. 5th & Myrtle, St. Louis, Mo.



0 1 2 3 4 5 6 7 8 9 10

cm

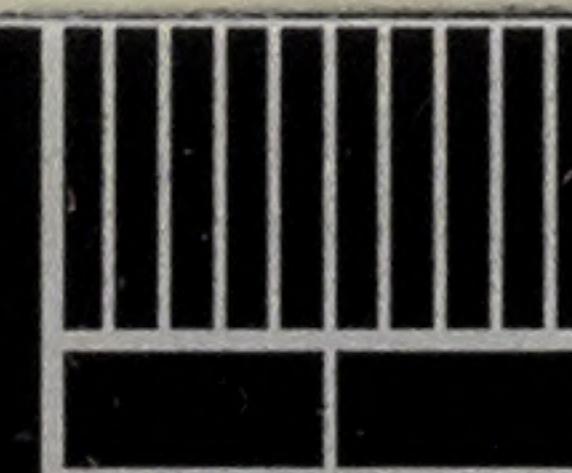
copyright reserved



MISSOURI
BOTANICAL
GARDEN

3719

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS



0
cm

1 2 3 4 5 6 7 8 9 10

copyright reserved



MISSOURI
BOTANICAL
GARDEN

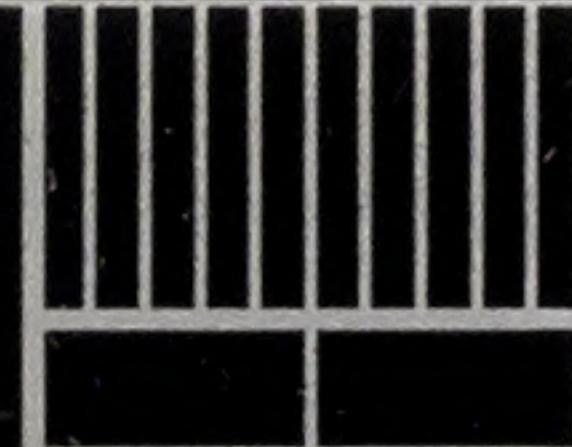
Scandola above 100-130,000 stomata to IInd
below 120-150,000

Candolius above scarcely any
below 150-180,000

S. lacini 40-60,000 above (similar
60-70,000 below (similar
cells

other S. l. comp very similar
probably with similar below
color & ~~color~~ properties

Others have fewer above and more
usually fuzzy as many as use
stom. color, ~~color~~ not
and in one spec. is white
& have not been able to identify yet
now at all above



0 1 2 3 4 5 6 7 8 9 10
cm

copyright reserved



MISSOURI
BOTANICAL
GARDEN

3720

By order of

Dear Sir:

Secretary.

Chairman.

AMERICAN ASSOCIATION FOR ADVANCEMENT OF SCIENCE,

LOCAL COMMITTEE

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

Missouri Botanical Garden
George Engelmann Papers

Missouri Botanical Garden
George Engelmann Papers



0 1 2 3 4 5 6 7 8 9 10
cm

copyright reserved



MISSOURI
BOTANICAL
GARDEN

Lactuca Canadensis? Mult. fls? June 30 1878

Epidemiis
of upper surface

magn $\frac{1}{415}$

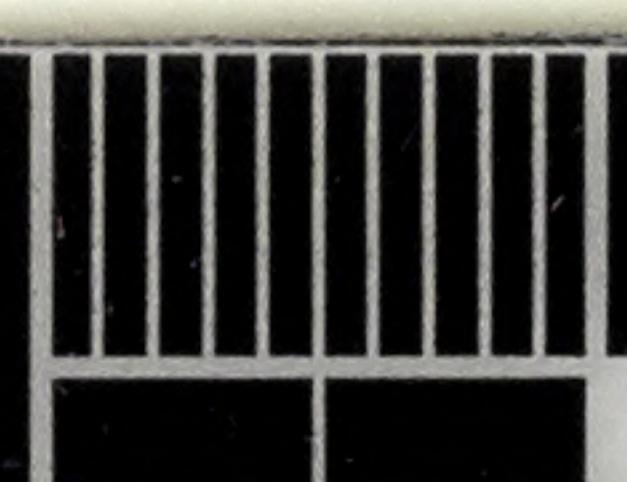

Epidemiis of lower surface

6-9 stomata in field of mm
13-15 - in field of diam.

(280)

very few, scattered stomata
on upper side

6 \square inch with
abt 300+ stom



0 1 2 3 4 5 6 7 8 9 10
cm

copyright reserved



MISSOURI
BOTANICAL
GARDEN

ARTHUR T. HOLLISTER,
Druggist,
301 South Fifth, S. W. Cor. 5th & Myrtle, St. Louis, Mo.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

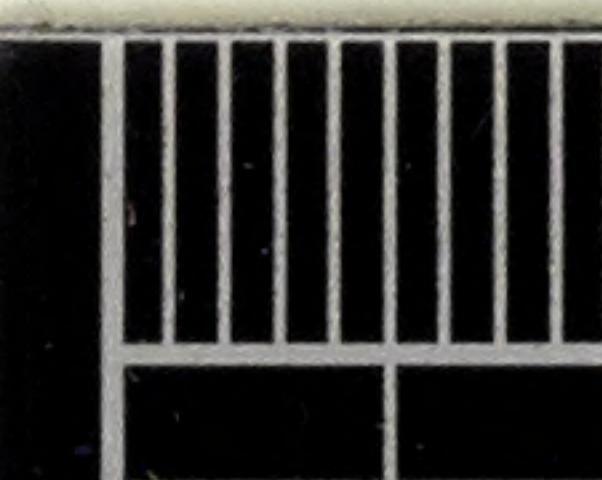
B

on lower side, in the field of magn. 150 I counted about 55-
stomata and scarcely 1 on upper.
proportion seems to be 1:100

In field of 0.80" diameter (magn. 150 diam.) 50-50
0.50" 64,000 - 71,000
0.43" 280 -- 13.15
0.29" 0.144" 59,000 - 68,000
0.065" (4 415-) 6 - 9
average 60-70,000 = 58,000 - 67,000

stomata $\frac{18}{415} = 0.043$ mm long, or about $\frac{1}{50}$ line
cells $\frac{20-50}{415} 0.048 - 0.120$ mm long $\frac{1}{50} - \frac{1}{150}$ line

half as many stomata as in *Lathraea Scariola*
and only on lower side.

0
cm

1

2

3

4

5

6

7

8

9

10

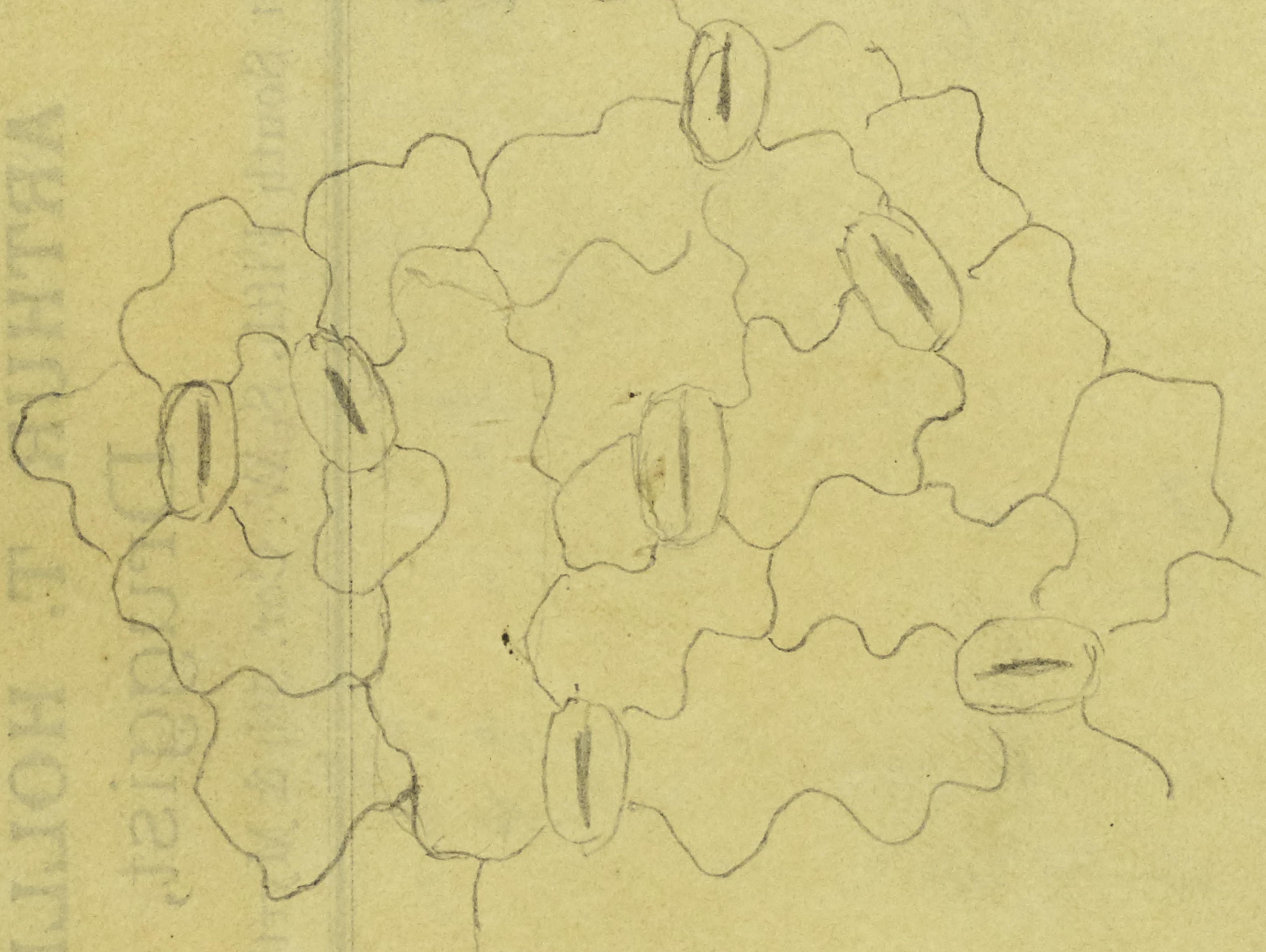
copyright reserved



MISSOURI
BOTANICAL
GARDEN

Lactuca Scandens

Adams July 4 1878

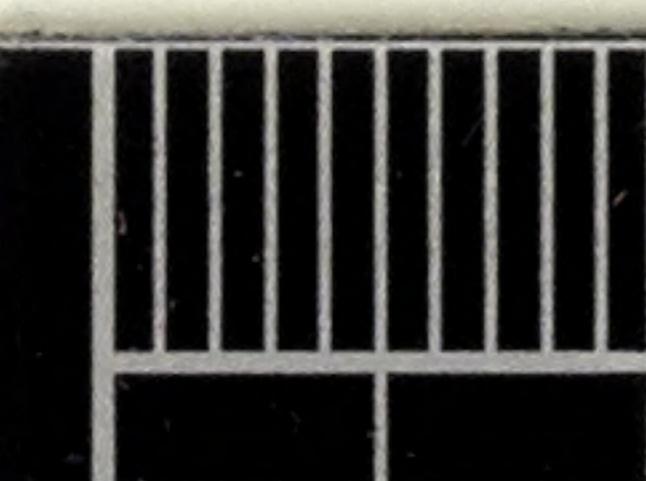
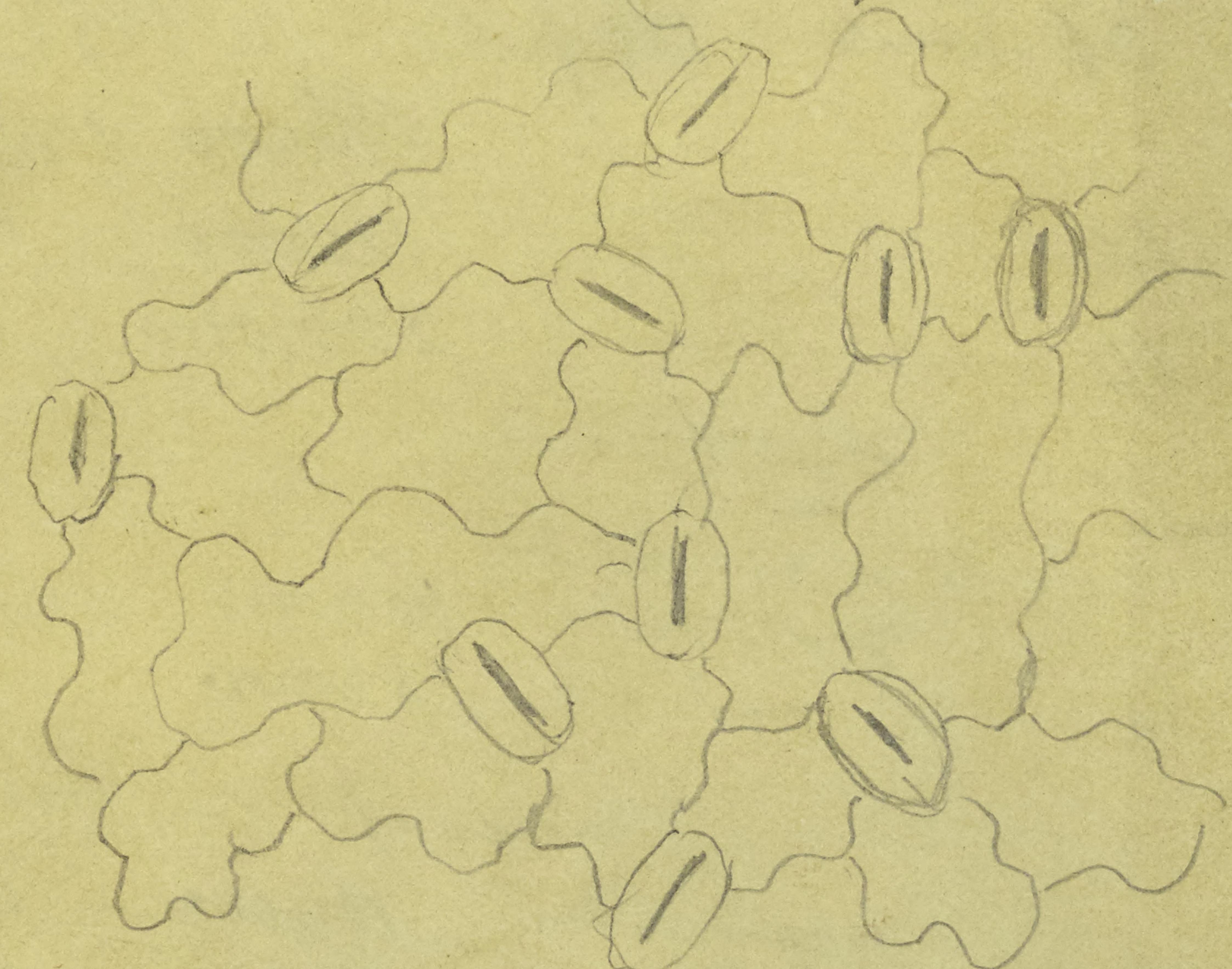


epidem. of lower side x 415

170,000 - 190,600 stomata
to square inch

6□ in. abt 8 stoma

stomata $\frac{10}{415} \text{ mm} = 0.024 \text{ mm} = 0.011 \text{ cm}$ or $\frac{1}{90}$ line



0 1 2 3 4 5 6 7 8 9 10
cm

copyright reserved



MISSOURI
BOTANICAL
GARDEN

37222

ARTHUR T. HOLLISTER,
Druggist,
MISSOURI ENGLAND PAPERS

301 South Fifth, S. C. W. R. & Co. 5th & Myrtle, St. Louis, Mo.

R
96
17
67.2
96
1632.00

$\times 4500$
37
31500
135
166,500

$\frac{4500}{18000}$
198
 $\frac{18000}{166,500}$

$\frac{31500}{135}$

$\frac{166,500}{182.5}$

415 full upside 19.16 18.00
under 17-21 19 - 19
mean 17

37-44 above $\times 280$

40-44 below

$\frac{4500}{30}$

$\frac{30}{18000}$

$\frac{18000}{166,000}$

$\frac{166,000}{198}$

$\frac{198}{135}$

$\frac{135}{166,500}$

$\frac{166,500}{182.5}$

180,000

200,000

mean
17 stout - 415 full

upper side 163,000

19 - - under side 182,000

mean of 12 obsrv. - diff. may favor

upper side 160,000 - 180,000 + stout to full

under side 170,000 - 190,000

About
actual measurement of magn. picture given, lower figure, above 135-160,000
below 155-160,000



0 1 2 3 4 5 6 7 8 9 10

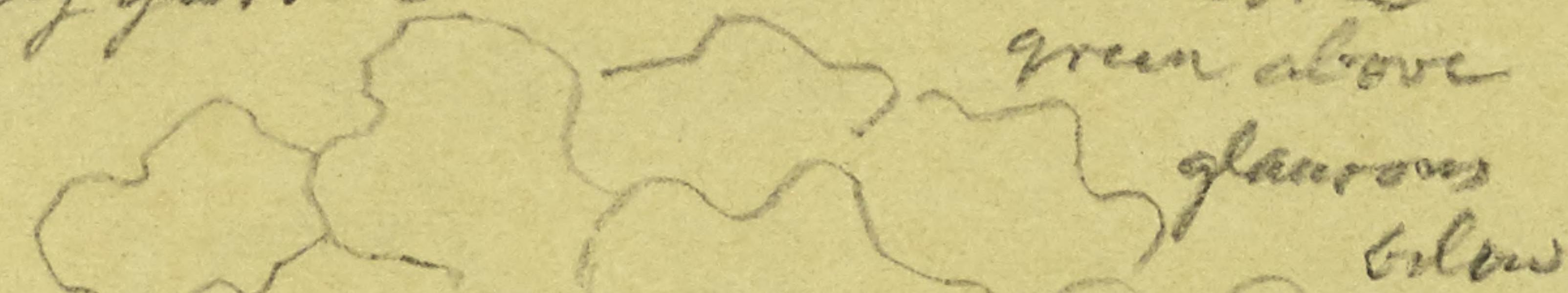
cm

copyright reserved



MISSOURI
BOTANICAL
GARDEN

leaf of 2 year old plant, oval, obtuse
- my garden corolla-sessile



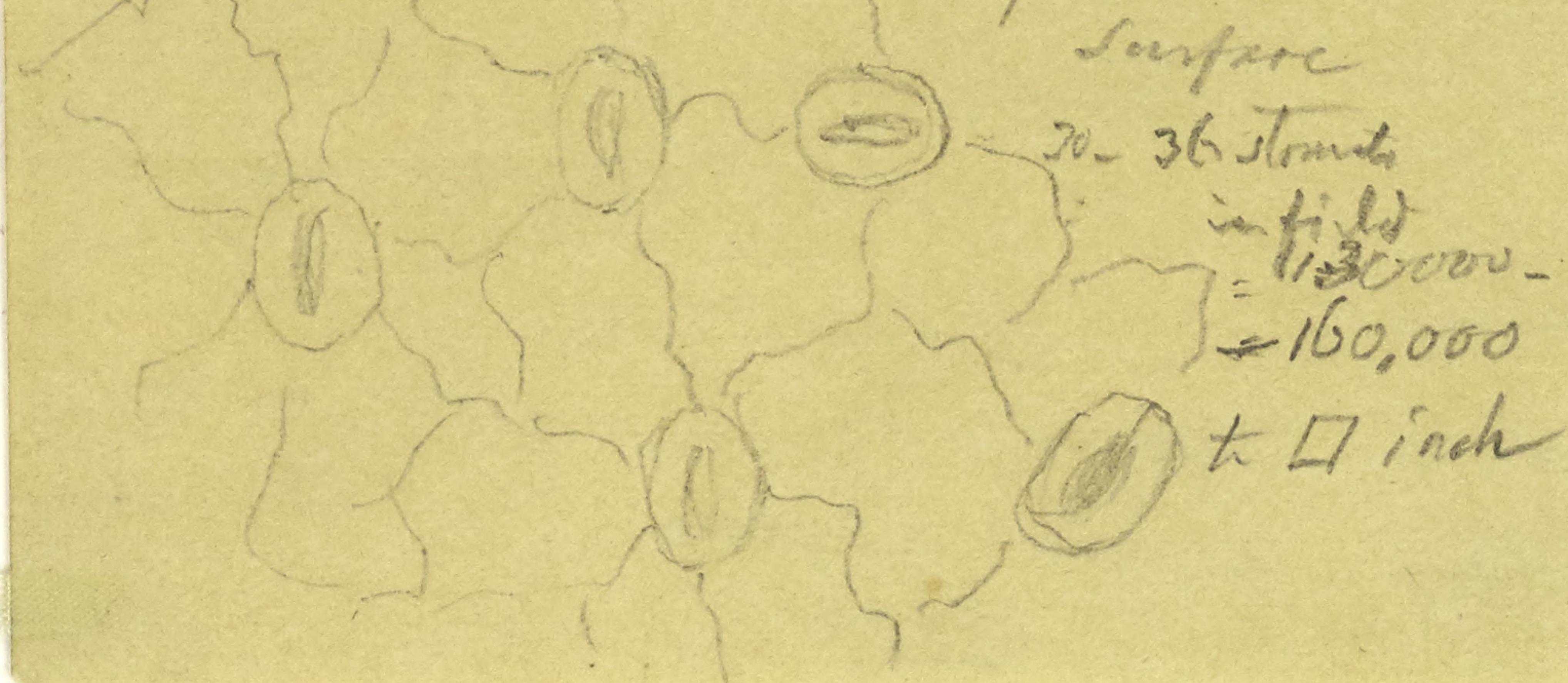
epidermis
of upper
surface
no stomata
cells larger and more sinuous

$\times 280$



epidermis
of lower
surface

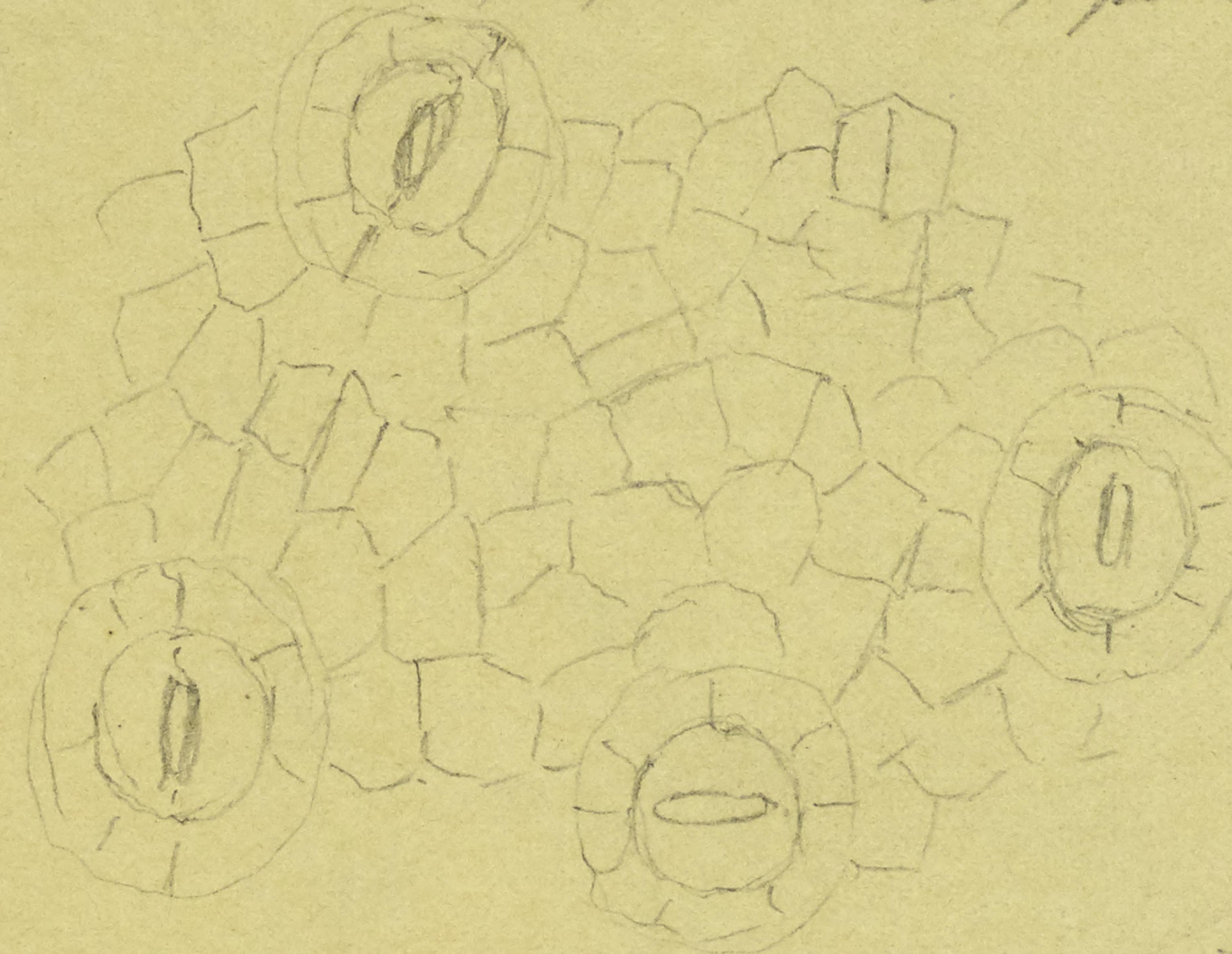
20-36 stomata
in field
 $\approx 130,000$
 $\approx 160,000$
to $\frac{1}{2}$ inch



Eucalyptus globulus

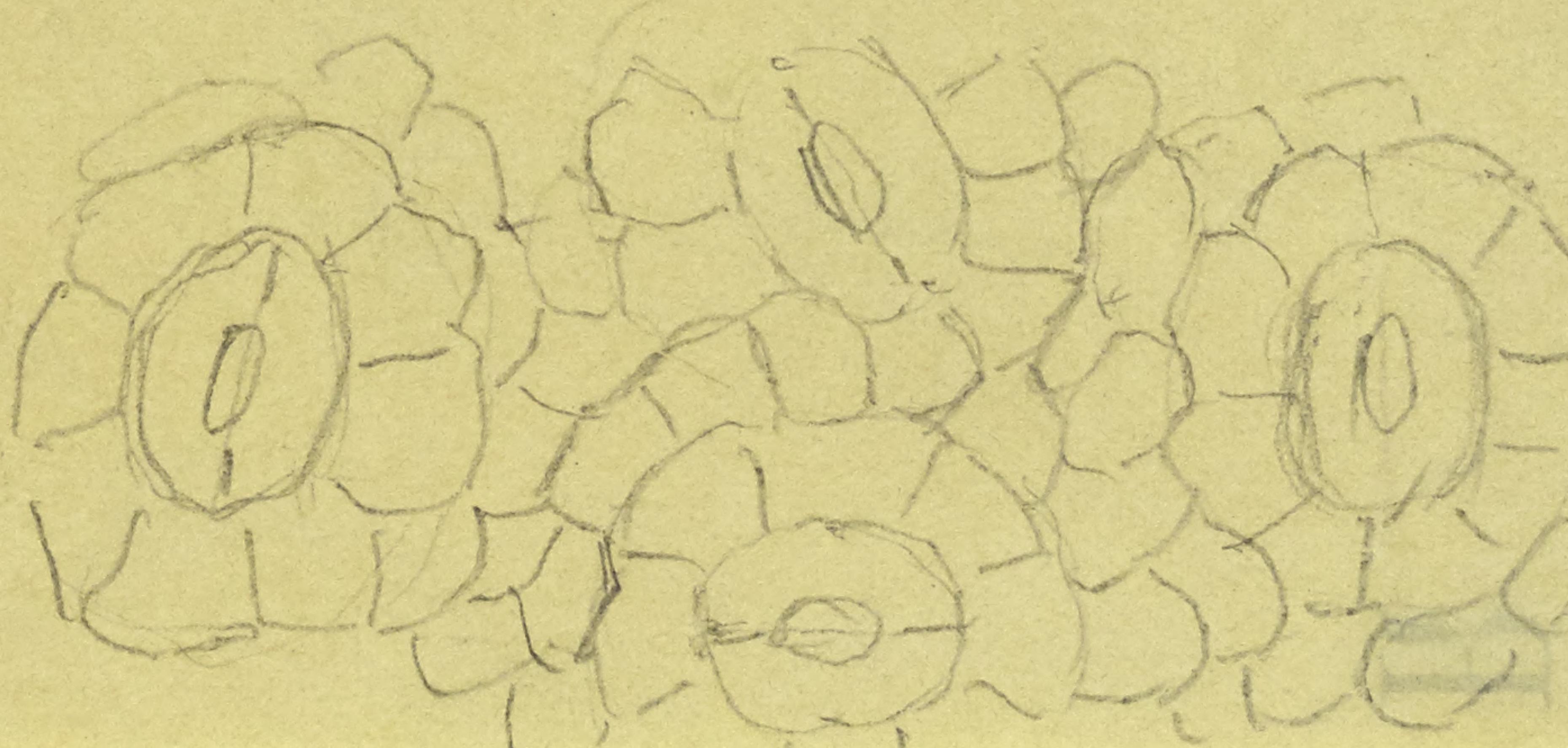
Oct. 17 1878

leaf of an old tree in Hort. of Naples,
obliquely lanceolate, petiolate, petioles
twisted



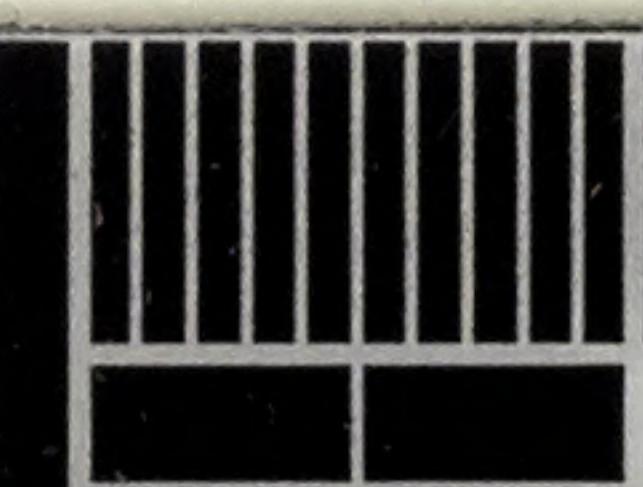
upper surface
 $\times 280$

stomata
 $30-40,000$
to $\frac{1}{2}$ inch



lower surface
 $\times 280$

stomata
 $45-55,000$
to $\frac{1}{2}$ inch



0 1 2 3 4 5 6 7 8 9 10

cm

copyright reserved



MISSOURI
BOTANICAL
GARDEN

3723

ARTHUR T. HOLLISTER,

Druggist,

MISSOURI BOTANICAL GARDEN

301 South FIFTH ST. ST. LOUIS, MO.

Rx

$$\begin{array}{r}
 3 \\
 55.00 \\
 36 \\
 \hline
 27.000 \\
 135 \\
 \hline
 162.000
 \end{array}$$

$$\begin{array}{ccc}
 & 26 & 29 \\
 \begin{array}{r}
 55.00 \\
 32 \\
 \hline
 31.500 - 45.000
 \end{array} & 10.00 & \begin{array}{r}
 13 \\
 29 \\
 \hline
 37
 \end{array} \\
 45.000 - & \hline & 26 \\
 & 78 & 29 \\
 & \hline & 37 \\
 & 26 & \hline \\
 & 338.00 & 377 \\
 & \hline & 78 \\
 & 37 & \hline \\
 & 13 & 13 \\
 & \hline & 114 \\
 & 0 & 38 \\
 & \hline & 49 \\
 & 135.000 & \hline \\
 & 37 & 49 \\
 & \hline & 481
 \end{array}$$

30 -

33-37,000

x1300

old leaf above 26-29 (x150)

below 37-38 -

48-49,000

mag. 280

x 4.500

above 7-10

below 10-14

Thru abv 30-45,000

etc 45-60,000

old leaf

25,000

resalt abv 30,000 - 40,000 stones to

17 inch

below 45,000 - 55,000

50,000



0 1 2 3 4 5 6 7 8 9 10
cm

copyright reserved

MISSOURI
BOTANICAL
GARDEN